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Governance Indicators Can Make Sense: Under-five Mortality Rates are an Example

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GOVERNANCE INDICATORS CAN MAKE SENSE¹

Under-five mortality rates are an example

Matt Andrews,² Roger Hay³ and Jerrett Myers⁴

ABSTRACT

Governance indicators have come under fire in recent years, especially the World Governance Indicators (WGIs). Critics present these indicators as a-theoretical and biased. Critics of the critics counter that no better alternatives exist. We suggest otherwise, arguing that more appropriate ‘governance’ indicators will (i) have theoretical grounding, (ii) focus on specific fields of engagement, (iii) emphasize outcomes, and (iv) control for key contextual differences in comparing countries. Such measures can help *indicate* where countries seem to have governance problems, allowing second stage analyses of what these problems are. We present under national five mortality rates adjusted for country income groups as an example of such measure, presenting data for contextually controlled outcomes in this specific field to show where governance seems better and worse. The United States is shown up as relatively weak, whereas a country like Pakistan seems to have better governance in this sector than other low income countries. The indicator allows questions about why governance of this sector might be problematic in certain contexts and easier in others.

¹ This paper is dedicated to the memory of Roger Hay who was committed to fair and effective work in development, health and governance.

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INTRODUCTION

We measure public sector governance because we believe that governance matters. But critics contend that the most common measures of governance are a-theoretical and biased and capture little more than a country's state of development. Measures like the World Governance Indicators (WGIs) aggregate information about outcomes, processes, and policy choices across various fields and areas of interest, which ultimately has them reflecting a sweeping perspective on a country's political, economic and administrative picture. This *may be* a useful measure if one is interested in governance as the *general* exercise of authority. But like any measure of general health this is limited as a diagnostic indicator and ultimately duplicates what one finds in comparative developmental data: more well-off people (nations) have better general health (governance) than others. Indicators should be reliable pointers and signals of specific things, and general measures arguably do not do this.

If we want to generate public sector governance indicators that do act as pointers and assist in guiding diagnostic activities, a few adjustments must be made, led by theoretical considerations about why authority is exercised in the public domain at all (and on whose behalf). Such questions lead us to focus the governance concept on specific fields of engagement instead of across society broadly. This entails looking at governance exercised across particular sets of organizations that, in the aggregate, constitute a recognized area of institutional life, demarcated in geographical or functional areas like child health care or education. Assessing governance across multiple fields at once is theoretically and practically problematic, as authority is seldom exercised in the same manner across fields, even in the same country. We center attention on the children's health field in this article, and ask develop an indicator that arguably points out how well such field is governed in different countries, allowing second-stage questions about why and what could be done to improve in those settings of weaker governance.

The children's health field looks different across countries, with different players in different settings. In some cases it is dominated by donor-led sanitation programs and in others it centers on private provision of early childhood vaccines, for example. We measure governance simply by looking at the results of the interactions of these different sets of players; or how authority is exercised to ensure these interactions get things done. The focus on outcomes—well-being measures like under-five survival rates—means we do not focus on processes or policy choices often dominant in governance indicators and which some may normatively prefer as a means to producing outcomes. Procedures and policies differ across countries with similar outcomes, because of different contexts that accommodate and may require different ways of exercising authority. Outcome indicators help to identify which countries have governance structures appropriate and inappropriate for their contexts, which will then allow a second-stage discussion of which procedural and policy approaches and paths fit best in different circumstances. The approach puts function ahead of form in assessing how effectively countries exercise authority in specific arenas.

Some aspects of context matter in a systematic way and need to be controlled when constructing governance indicators, however. Countries fall into different categories

just as people are in different age groups, for example, where one expects predictable differences in general health and in the prevalence of particular health ailments. Variations in country-level survival rates are largely explained by differences in per capita income, for example, which suggests that the under-five survival rate of a low income country will dependably differ from a middle income country which will dependably differ from a higher income country. The dependable differences are noise when one is trying to reflect how poorly or well authority is exercised in the countries (as in governance). Low income countries should be compared with low income countries and high income countries with high income countries as a result, where governance indicators show how countries compare at their income level. We propose that this is like looking at whether a boxer boxes below, at, or above his weight level. The answer to such question points to whether that boxer (country's child health sector) manages himself and his talents well (is well governed).

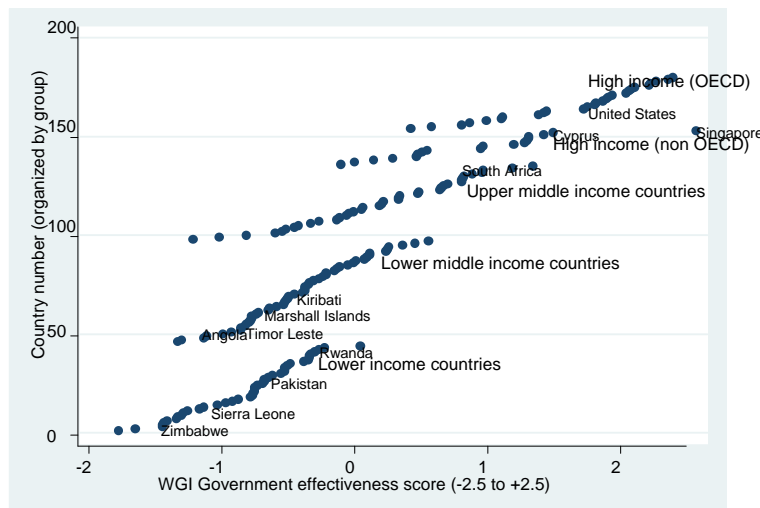
WHERE WE STAND IN MEASURING GOVERNANCE

The good governance community blossomed in the past decade, as academics and practitioners have warmed to the idea that governance matters to social, political and economic development. At its most basic, 'governance' is seen to refer to "the general exercise of authority" (Michalski, Miller and Stevens 2001, 9) or, as the World Governance Indicator (WGI) developers put it, "[T]he traditions and institutions by which authority in a country is exercised" (Kaufmann, Kraay and Zoido-Lobaton 1999, 1). Built ostensibly on this general definition, the WGIs have emerged as arguably the most influential governance measure (Arndt and Oman 2006). They combine various stand-alone elements into aggregate indicators of six governance concepts, including 'rule of law' and 'government effectiveness'. These mix outcomes (like effective health care statistics) with processes and structure (like meritocratic hiring and the degree of decentralization) and policy choices (about the size of government, for example, and the extent to which a government exhibits a pro-business orientation). The various elements are aggregated into indicators that apparently reflect how well authority is exercised, by concept area, in a country (a.k.a. governance). Figure 1 shows scores for 181 countries on the 'government effectiveness' element. Scores to the left on the horizontal axis reflect poorer governance (below zero).

Indicators like this are used to benchmark countries against each other, identify better from worse governed countries, and guide the latter group of countries in identifying options for reform. Critics contend that governance indicators like the WGI's are less than useful in facilitating these tasks, however, especially in guiding countries to paths for governance improvement (Andrews 2008, Kurtz and Schrank 2007, Thomas 2006). Some ask what the indicators actually measure, given that they aggregate so many elements into dimension scores (and that elements differ for different countries). Countries can record similar scores on the basis of different types of data input as a result, which complicates indicator interpretation and use. One country may have a well governed education system but a poorly governed health system, for example, but both may get similar scores on the 'government effectiveness' measure. Given this, we do not know why Singapore has a higher score than the USA in Figure

1, or Kiribati better than the Marshall Islands or Sierra Leone. Or why Sierra Leone and Angola score similarly.

Fig. 1. WGI Government effectiveness scores for 181 countries, 2007



Even where countries score commonly in the same sector, it is often with very different types of procedural inputs and processes distributing and regulating authority. Strong health sectors emerge in different-looking systems in OECD countries, for example, with some ascribing greater authority to the private sector (USA) than others (Sweden) (Andrews 2008). This is confusing given that the indicators imply that some processes are ‘better’ than others (and these ‘better’ processes are often the source of reform advice emerging from a good governance benchmarking exercise). Smaller government size is positively presented in the governance indicators, for example, as is a professionalized civil service, as is disciplined fiscal management and flexibility for private sector activity. Are all of these forms of engagement equally effective and ‘good’ across different functional fields and countries? Are these ‘better’ practices really better? Do countries that look better even have the same practices in place? Input data is also often captured in perception-based surveys as well, which fuels claims of bias in the data and also leads to questions about validity and reliability. Are the data really just reflecting charged opinions of narrow respondent sets?

A colleague, reflecting on these kinds of issues, suggests that the indicators are at best like measures of ‘general health’ individuals get from their doctors. His perspective echoes those who believe the indicators act as proxies of a country’s state of development. This is shown graphically in Figure 1, where the movement from left to right (lower to higher government effectiveness scores) reflects a move from the lower income countries to lower middle income, upper middle income, and high income countries. What the figure shows graphically is also evident in statistics, with a strong correlation existing between WGI dimension scores like ‘effective government’ and per capita income figures (0.76 in the 181 countries shown in Figure 1, significant at 0.00). If a country is more developed, it also seems to have better governance. The problems with these kinds of indicators are numerous, and reflect problems with general health indicators: They are biased towards certain groups (just

as young adults are mostly in better general health than older adults, for example, even if older adults are in good general health relative to their age); they can mask specific problems (that require more specific diagnostic approaches); they are seldom useful in helping find appropriate treatments to ailments (saying someone is in bad general health does not bring one closer to advising them on where the problem lies or what to do about it).

When confronted with these kinds of critiques, some defend the current governance indicators, suggesting that they may be the best way to measure ‘governance’ (Kaufmann, Kraay and Mastruzzi 2007). We agree that some defense is appropriate, and indicators like the WGI have helped put governance onto the development agenda. We also contend, however, that there are better approaches to developing indicators, where the indicators really do allow benchmarking, the identification of better and worse governed countries (given contextual differences which structure expectations of ‘better’ and ‘worse’), and a starting point for exploring ways of getting better. The approach to identifying such indicators must begin with a theoretical understanding of what we are talking about, something we believe current governance indicators lack.

THEORIZING ABOUT GOVERNANCE

We believe that theoretical frameworks are important constructs for thinking about why a certain phenomenon matters (Andrews 2008). This understanding helps us to measure the phenomenon. Governance indicators have been developed with little theoretical framework, which is one reason why they are vague and imprecise (Thomas 2006; Kurtz and Schrank 2007). If we stick with the general idea that governance is about exercising authority, we wonder who the authority is exercised by, on behalf of, and for what reason? Answers to such questions will help guide us to appropriate measures of the phenomenon.

Interestingly, the literature on publicly traded companies defines corporate governance in a manner that embodies answers to such questions, and helps one locate the phenomenon in a theory of the firm. Using Tirole’s (2001,4) definition, one sees corporate governance as “the design of institutions that induce or force management to internalize the welfare of stakeholders.” Consider the basic elements of governance implied in this definition: (1) It is focused on how mechanisms (institutions) regulate (2) the way that authority is exercised by one set of agents (managers) (3) who act on behalf of a broad group of principals (stakeholders) (4) with the goal of maximizing the welfare of these principals (stakeholders). Combining these elements, we see that good governance emerges when specific agents exercise delegated authority in such a way that their specific principals enjoy improved welfare.

This definition has parallels in the political science and public management literatures. Kooiman’s (2003, 4) characterization of governing, for example, points to “the totality of interactions, in which public and private actors participate, aimed at solving societal problems or creating societal opportunities.” Hill and Lynn (2004, 4) describe public sector governance from a management perspective, as “Regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe,

and enable the provision of publicly supported goods and services through associations with agents in public and private sectors.”

The idea of delegated authority emerges across these definitions, as does the focus on outcomes as the purpose of delegated authority (maximizing stakeholder welfare, “solving societal problems or creating societal opportunities” and ensuring the “provision of publicly supported goods and services”). In the public sector context we are obviously dealing with governments as the agents to whom authority is delegated, by citizens (as principals), with the explicit goal of maximizing various kinds of social welfare (as the outcome). Governments can use this delegated authority in many ways: to garner and allocate resources, build capacities (human and physical), regulate via laws or force, and such. We argue that governance is superior when authority is exercised in such a manner that social welfare is maximized and governance is inferior when authority is exercised in a manner that does not maximize welfare.

Note that, in this definition, governance is not assessed on the basis of processes of mechanisms in place or even on the specifics of how authority is exercised. While we agree that governance is influenced by what Tirole (2001,4) calls “institutions that induce or force management to internalize the welfare of stakeholders,” we do not think that particular sets of institutional forms necessarily *indicate or reflect* good governance better than others in all settings. Similarly, we agree with Hill and Lynn (2004, 4) that governance systems comprise “Regimes of laws, rules, judicial decisions, and administrative practices that constrain, prescribe, and enable” service provision, but we do not believe that the presence (or absence) of particular types of processes and mechanisms necessarily *indicates* whether governance is good or bad. We hold that governance institutions, processes, ‘regimes’ and such that ascribe and distribute and shape authority can vary across countries and sectors for legitimate, contextual reasons, most notably the different roles of government in countries. United States citizens have given different authority to local and federal government in the education and health sectors, for example. And United States citizens give their government different authority to that delegated by Swedish citizens or Ghanaian citizens to their governments, for example, implying different roles, interactions and mechanisms for governing.⁵

Some roles, interactions and mechanisms might be more effective than others in facilitating better governance outcomes, but these can only be identified after we look at specific organizational fields (education or health care, for example), measure the outcomes of interactions in these fields, and consider contextual differences between countries. Function must lead form.

FOCUSING ON ORGANIZATIONAL FIELDS

In considering this theoretical approach we believe that governance can only, by definition, be assessed in the context of specific fields, defined in organizational theory as the particular set of organizations that, “in the aggregate, constitute a

⁵ We are obviously simplifying the idea of citizens authorizing states to act, which is not this simple.

recognized area of institutional life” (DiMaggio and Powell 1983, 148).⁶ The field includes “suppliers, resource and product consumers, regulatory agencies, and other organizations” involved in getting things done in a particular functional area (DiMaggio and Powell 1983, 148). Such system is an appropriate unit of analysis for governance research because it involves multiple players, particularly principals and agents, who are constantly engaged in allocating, receiving and managing authority to do specific things, with particular functional results expected. The quality of governance is reflected in how well the entire field engages to produce these results.

One should note some important features of organizational fields (Scott 1987, 122-125). They come in different sizes and with different relational structures (often driven by resource access, which can yield fields placid, disturbed or turbulent, randomized, reactive or clustered (Emery and Trist 1965)) and different authority typologies (including social-choice, coalitional, federative and unitary (Warren 1967)). They are sometimes geographically centered and sometimes dispersed. These differences are reflected in different relational and normative governance structures which emerge organically to reflect context and simultaneously “have strong effects on their constituent organizations” (Scott 1987, 123).

Governments play different roles in different fields, largely because the sets of players and institutional logics differ in different fields, rates of change in fields varies, and demands on controlling and shaping behavior are not always the same (Di Maggio and Powell 1991; Reay and Hinings 2005). The education and health care fields look very different in the United States, for example. The roles of Federal, State and Local governments differ between these two fields, as does the relative size and scope of engagement by private and non-profit players. These differences matter because public sector governance is about the exercise of authority by government agents, on behalf of citizen principals, to maximize the welfare of those principals; and all of these elements are field-specific. In some fields citizens delegate authority to government to regulate, in other fields to provide services directly.

As a result of the expected variation in structures between fields within and across countries, and the implications of such for governmental roles, we believe that governance indicators should be defined by the field in which outcomes are produced, players can be identified, and authority structures delineated. This allows governance indicators to look like specific rather than general health measures. Prominent governance indicators pay indirect homage to this, including the WGI, which separates ‘government effectiveness’ from ‘rule of law’ in its components. But these are categories of interest and not defined areas in which authority is exercised—the key driver of the governance definition. As a result, the measures become difficult to interpret. Practitioners, policymakers and researchers would be better served with indicators focused on specific outcomes in specific fields that make immediate sense and can be acted upon. We see the child health arena as one field, with identifiable outcomes and navigable organizational fields—where one can identify key agents, organizations, organizing logics and systems connecting and structuring such (even

⁶ Fields are similarly referred to as arenas or subsystems (Parto 2005) seen as “the social space where individuals interact, exchange good and services, solve problems, dominate one another, or fight” (Ostrom 1999, 42).

though these do vary across countries and over time, shown in studies on changes to health care fields more broadly, in Currie and Guah (2007) and Greenwood and Hinings (1996)). Child health is the complex product of multiple players bringing multiple inputs to bear in these fields, under specific authority structures, with different effects in different settings⁷ (other field-based studies include Beaumont (2003) on antipoverty systems and Parto (2005) on waste subsystems in the Netherlands and the UK and Knill and Lehmkuhl (2002) on regulation of the internet).

EMPHASIZING OUTCOMES

We assume that principals delegate authority to agents in order to achieve outcomes. Mirroring basic theories of public finance, we hold that citizens delegate authority to the public sector when faced with restrictive costs or complicated problems of cooperation and coordination. Citizens are still looking for outcomes in return for the delegated authority, however, and the quality of public sector governance is reflected in whether public organizations exercise authority in a way that facilitates outcome and value production. This is true in the area of macroeconomic management, policing and defense, education, health care, and a myriad of others.

Cross-country public sector governance indicators should focus on domains where most would agree that citizens accord governments authority to influence outcomes (Andrews 2008, Goldsmith 2007). This could include ‘public goods’ interpreted narrowly (like defense) and more broadly (in the Millennium Development Goals (MDGs), for example). Outcome measures should be constructed to reflect effectiveness (what level of service is produced, for example) as well as equity (how many citizens have access to the service) and cost (how much do citizens have to pay). The last consideration is particularly important because efficient production of one good allows citizens resources to consume other goods (further improving welfare). Inefficiencies in one organizational field will impact effectiveness in others.

We present under-five mortality rates (u5mr) as an interesting example of a governance outcome variable. The Millennium Development Goals embed targets for this outcome, indicating both its importance to social welfare in development and the general perspective that it is influenced by publicly-exercised authority (given that MDG commitments involve governments) (Lawn et al. 2007). Buckley (2003) notes that the infant mortality rate is “regarded as one of the most revealing measures of how well a society is meeting the needs of its people.” Performance on the indicator is also understood to reflect both the level of service provision and equity of such provision, with more equal countries tending to have better u5mr statistics (all else equal) than others (Filmer and Pritchett 1999). Governance is cited as an influence on this rate as well (Baldacci et al. 2008; Lewis and Musgrove 2008). From a theoretical perspective, we see governance reflected in this indicator via the following rationale:

⁷ Various authors have chronicled the complex lists of players and influences in the child health field, including Rajkumar and Swaroop (2008) who show that government health entities matter; Filmer and Pritchett (1999) find that players in the education and religious realms matter as well; Wang (2003) argues that producers of electricity influence infant mortality rates in urban areas; Fay, Leipziger, Wodon and Yepes (2005) note that providers of basic infrastructure influence mortality rates as well.

Citizens grant public organizations the authority to ensure optimal provision of child health care, in whichever way appropriate, reflected in the cost efficient production of the highest possible survival rate of all children under five. Governance systems are 'good' when they ensure relatively high survival rates at relatively low average cost.

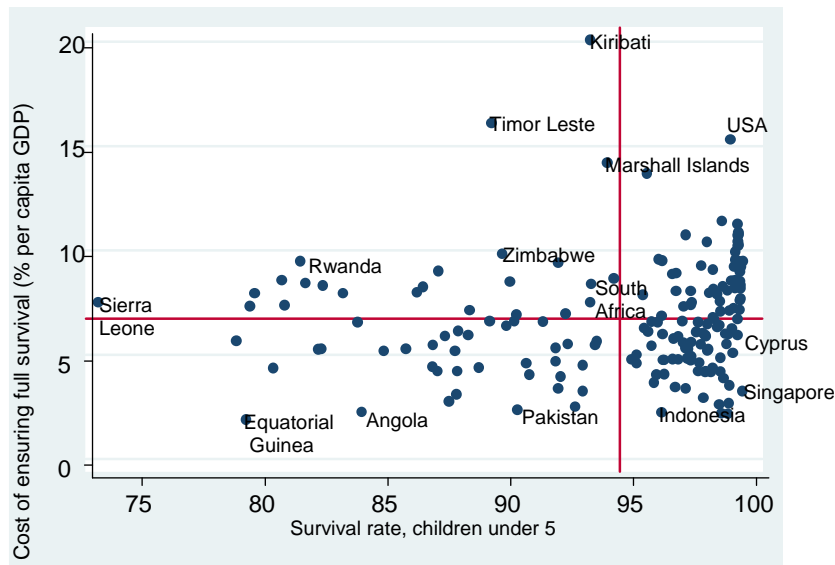
Figure 2 shows this for 181 countries in 2005. The horizontal axis shows the survival rate for children under-five years of age in these countries (calculated simply as $1 - \text{u5mr}/1000$).⁸ Higher scores indicate more welfare for citizens. The vertical axis shows a proxy for the average cost of producing these services, drawn from the proportion of per capita GDP spent on health.^{9,10} Lower relative costs indicate more welfare for citizens. Countries in the bottom right quadrant, like Indonesia, Cyprus and Singapore, have higher survival rates than the global average (94.7%) and lower costs than the global average (6.7% of GDP per capita). This is a zone of relatively good governance in the child health sector, where authority is exercised across service delivery processes and relationships in a manner that results in strong outcomes at relatively low cost. Countries in the top left quadrant, like Sierra Leone, Rwanda, Timor Leste, Zimbabwe and South Africa, are producing lower than average child survival rates at higher than average costs. This is a zone of relatively inferior governance, reflected in a failure to exercise authority in a manner that ensures contextually appropriate levels of child survival.

Fig. 2. Examining governance through u5mr data for 181 countries

⁸ In the case of the United States, for example, the u5mr in 2005 was 7.9 per 1,000. This means that the survival rate for children under 5 is $1 - 7.9/1000 = 99.21\%$.

⁹ The measure shows the percentage of per capita GDP required to ensure full survival of children under-five, given 2005 spending on health care. It is calculated by assessing the relative cost of producing one percentage survival rate, and then multiplying by 100. For the USA, 15.18% of per capita GDP in 2005 was spent on health, ensuring 99.21% an under-five survival rate. This relates to 0.153% of GDP per capita required to produce 1% of under-five survival, which equates with 15.30% of GDP per capita required for achieving a full survival rate.

¹⁰ The proportion of GDP per capita spent on health care is just a proxy for cost of ensuring under five survival. There are obviously health costs in all countries not dedicated to child health. All countries also have expenditures on child health that are not recorded under 'health' (like sanitation expenditures).



We propose this kind of two-dimensional graphic outcome measure as a compelling indicator of governance, relative at least to the field of child health. Readers should note that it simply shows whether authority exercised in a given field in a given country is producing value of relevance to citizens (cost efficient production of child health). It does not stipulate or evaluate how interactions work or which regulatory controls facilitate specific kinds of value creation. It allows questions about these important aspects of governance as secondary points of reference, however: Why is child health so much more expensive in the USA than Singapore? Why is Pakistan in a seemingly better position than South Africa and Timor Leste?

WHAT ABOUT PROCESS?

The primary focus on outcomes is a major departure from the conventional approach to constructing governance indicators, which tends to combine outcome, process and policy elements into single measures. There are multiple problems with this conventional approach, including the observed fact that many outcomes can be effectively produced through alternative processes, with different input mixes and different structural and institutional devices regulating how authority is exercised. The major reason is that different actors have different authority in different settings and governments, therefore, exercise their authority very differently. This leads articles like Lynn et al. (2000) to focus on outcomes as the indicator of governance and other factors as variables—open to variation and adjustment.

Health care is provided in different ways across countries and by different actor combinations, for example, with the private sector playing more of a role in the USA than in Sweden and decentralized governments taking the lead in some OECD countries and not in others (Andrews 2008; Mosca 2007). These differences in context mean that governments exert authority in different ways (sometimes over resources and sometimes via regulation, for example). Ensor and Cooper (2004) note that health care is influenced by different actors and factors in different contexts and Sepehri et al. (2007) find that the composition and structure of households and society influences how and how well health systems work.

We believe the key issue is whether governments exert authority in ways that produce results in context, not whether they exert authority in any specific manner or adopt organizational models or approaches that seem appropriate in a benign, best practice way. Form should follow function and not the other way around. This is even an issue when considering how well endowed countries are in the inputs required to produce outcomes. One may be tempted to think that improved access to doctors and nurses is an undeniable intermediate product that reflects good governance. Governments should use their delegated authority to build cadres of doctors and nurses as a result. But South Africa is ranked 3rd and 4th in Africa on these measures and can only muster 7th position in terms of infant mortality (Rotberg and Gisselquist 2008). The Comoros Islands comes in 6th on infant mortality even though it ranks 18th and 20th (out of 48) on the two access measures (Rotberg and Gisselquist 2008).¹¹

While access to doctors and nurses are undoubtedly valuable inputs to child health outcomes, they may not be *the keys* to effective service delivery in the Comoros or South Africa and other strengths or weaknesses in authority structures may be more salient. The relatively weak infant mortality performance of South Africa may, for example, be less reflective of government's failure to use authority in building these cadres and more a failure of players within the child health field to effectively exercise authority in dealing with other issues—like the presence of HIV/AIDS. The relatively strong performance in the Comoros may reflect wise and resourceful use of financial, legal and political authority in the child health sector—which may not be reflected in improved numbers of doctors and nurses. It may be reflected in improved water and sanitation infrastructures (which Fay et al. 2005 note as a vital influence on infant mortality rates). Incidentally, the strong performance in these types of countries may reflect a governance structure heavily dependent on donors—which is interesting to think about from a sustainability perspective.

We believe that incorporating specific process, participation or regulation elements into governance indicators imbues these elements with an un-warranted 'best practice' legitimacy that might distort discussions on improving governance in varying contexts. Measures that suggest there is generic value in having a decentralized health system, for example, or a specific budgetary allocation to health care, or a certain type of basic health care package or local health clinic structure,¹² may lead a reform discussion towards these 'best practice' solutions instead of a discussion of contextual problems prohibiting outcome improvements. This is not a concern if the solutions are coupled with the problems, but experience suggests this is often not the case (especially manifest in the cross-country variations in the way many services are produced). Processes and mechanisms that earn a country

¹¹ Other articles cite additional influences on child survival rates, which also seem to have different influences in different contexts—rather than a one-size-fits-all influence everywhere. These include state spending (Palma-Solis et al. 2009; Rajkumar and Swaroop 2008), basic infrastructure (Fay et al. 2005), electricity in urban areas and access to vaccines in rural areas (Wang 2003), controlled inflation (Baldacci et al. 2008). Some authors cite multiple influences that are contextually relevant (including Cooper (2004), Lawn et al (2007) and Sepehri et al (2008)).

¹² See the Ministry of Health indicators in Malawi in 2003, for examples.
http://gametlibrary.worldbank.org/FILES/441_Health%20sector%20Indicators%20and%20Indicator%20Definitions%20-%20Malawi.pdf

legitimacy with external partners (a la isomorphic mimicry) may not improve governance at home, simply because they do not improve the way authority is exercised in the context to ensure maximized citizen welfare (Andrews 2009).

We hold that an outcome indicator of governance should effectively facilitate discussions about processes, participation and regulation elements as a secondary point of reference. As already mentioned, Figure 2 raises some important questions in the case of the United States of America, for example, in which comparatively high survival rates for children under five are achieved at relatively high costs (15% of per capita GDP). Singapore actually produces higher rates of survival for less than a quarter of the per capita cost (3.27% of per capita GDP). One may wonder why and what the USA can learn from Singapore about effective use of public authority to shape its child health field? Or if the per capita spending on health care is higher in the United States because the young subsidize the old? These lessons could be about context itself: Perhaps it is easier to produce cost efficient health care in a small island state? The lessons could also be about which players are involved (including the share between public and private, local and national players) as well as what specific roles government can play. Timor Leste and Zimbabwe could similarly learn lessons about cost containment from Pakistan, as the three countries have similar rates of survival but different per capita costs. Secondary questions can help researchers examine the mechanics of governance and if different combinations of actors, or different institutional tools, facilitate better forms of authority and hence outcomes across countries. Once again, the answers may be that these countries are materially different in context (size differences are apparent, for example).

CONTROLLING FOR CONTEXT

Some contextual factors impact outcomes in a reliable fashion and muddy the study of governance. We know, for example, that income levels have a significant impact on mortality rate statistics (Pritchett and Summers 1996; Filmer and Pritchett 1999), and that even income scores from 25 years ago can explain inter-country differences in under-five mortality rates. The fact that Pakistan has a lower survival rate for under five year olds than Singapore may thus be more about its level of development than its governance quality. Indeed, only 3 of the 64 countries in Figure 2's bottom right 'good governance' quadrant are low income countries (Vietnam, Uzbekistan and the Kyrgyz Republic). 15 out of 24 countries in the top left (inferior governance) quadrant are low income, with the highest income country in this quadrant being from the upper middle income country group (South Africa). Higher income countries are also disadvantaged by development status, given that health care costs per capita are much higher in these countries. Higher income countries account for 32 out of the 57 countries in Figure 2's top right quadrant (better than average survival rates at higher than average costs). This could imply higher costs (and hence lower welfare) in these countries, or a health care product that ensures significantly more than survival for under-fives (because perhaps more developed citizenries demand more than just survival and also because health care cost indicators used show a cross subsidization of health costs for the aged).

These kinds of dependable contextual variations are important to consider in both assessing governance through outcomes and in identifying where different countries should look for lessons on how to improve. Like must be compared with like and context must be controlled for in governance indicators. We take a simple approach to controlling for context, starting first by observing which variables do have a dependable influence on the outcome in question. As discussed, in the case of child health, this variable is the nation's income level (Filmer and Pritchett 1999). Figure 3 shows just how much variation there has been in mean scores for survival rates over the years, across four 'income leagues'—lower, lower-middle, upper-middle and higher (based on United Nations' classifications).

Lower income countries average under five survival rates in 2005 lower than the survival rate average in higher-income countries in 1960. Figure 4 shows that the deviation across income leagues is also different, being higher in the lower income group. Higher and upper-middle income groups have seen greater convergence around commonly high under five survival rates. Given such data, we should not expect that a lower income country will score a survival rate as high as a higher income country: Even if the lower income country has the best *form-based* governance in the world.

Fig. 3. Average survival rates across 'income leagues', 1960-2005

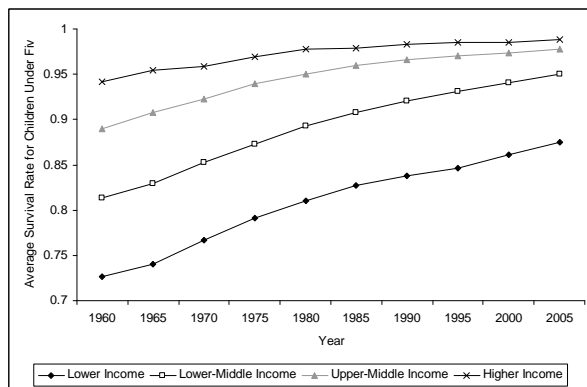
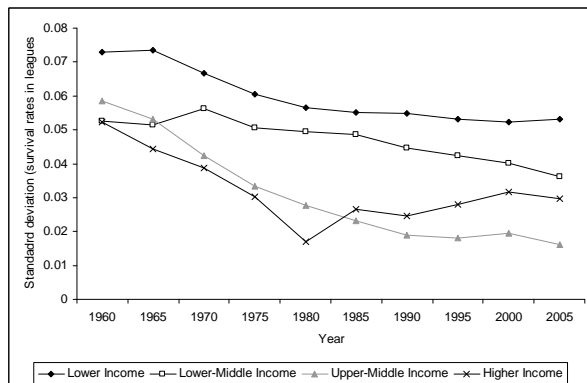
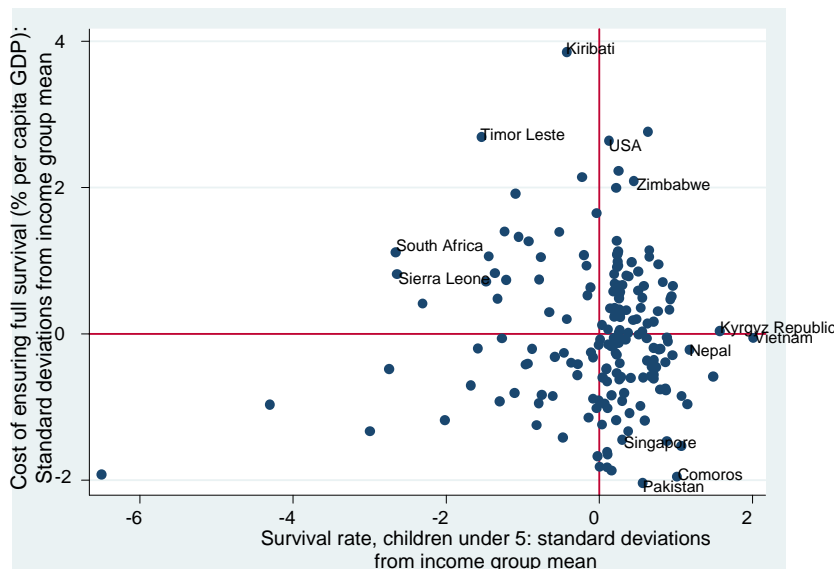


Fig. 4. Standard deviation in survival rates across 'income leagues', 1960-2005



Given these observations, we create a governance outcome measure that controls for income leagues present across the world, using the United Nations Classification as a guide. The underlying argument is simply that governance in the field of child health is best assessed through outcomes when comparing lower income countries with other lower income countries, and so forth. So we ask how far each country's survival rate and cost scores are from the averages in their league, measured in standard deviations to allow comparison across all countries (applying an approach similar to Anderson and Morrissey 2006 and Lawrence 2006). Z-scores are calculated for all of the countries, using the score for each country (of the survival rate and cost), and the mean and standard deviation (for both measures) for the relevant country set (low income, lower middle income, upper middle income and higher income (OECD and non-OECD)). Figure 5 shows the results, with the USA survival rate ending up 0.13 standard deviations above its high income country group survival rate mean, but 2.64 standard deviations above the high income country group cost average. South Africa stands -2.65 standard deviations below its comparator group (high middle income) in regards to survival rates, and is also 1.12 standard deviations above average mean costs in this group.

Fig. 5. Child health outcomes controlling for income group



We like to think of this graph as showing where governance systems ensure the provision of child health quality at, above or below their income level; much like one asks if a boxer boxes at, above or below his weight level. As in Figure 2, the lower right-hand quadrant shows those countries that 'box above' their income levels by producing higher survival rates than the average of their income group (at zero, the vertical line) at lower costs than the average of their income group (the horizontal line). One should note that some countries change their position given the contextual control:

- Pakistan moved from the lower left quadrant in Figure 2 to the lower right quadrant in Figure 5, for example (because its survival rate was lower than the

overall world average but higher than its comparator lower income group average). Pakistan's performance is below average in comparison to the entire world, but above average when compared with countries in its income group. Much like a middle-weight boxer may routinely lose against a good heavyweight but be the best of the middleweights.

- The USA "boxes at its income level" in terms of the survival rate produced (0.13 standard deviations above the average of higher-income countries) but it "boxes below its income level" in terms of cost of production, with costs over 2 standard deviations higher than the high-income country average. The USA is an economic heavyweight boxing at the middleweight level because of high health care costs. Using the language of governance, we conclude that authority in the US child health field is not being exercised in a manner that maximizes welfare (given the high costs of producing services).
- The situation is more dire in South Africa, where weak governance in this sector is reflected in weak service delivery (lower than average upper middle income group survival rates) and high costs (higher than average upper middle income group cost per capita). South Africa may be an economic middleweight, but its child health care field struggles to compete as a welterweight.

The approach to measuring governance in Figure 5 helps one to identify the top contenders or better governed countries (in this children's health field) in all income groups:

- 16 Low income countries fall into the bottom right quadrant: Pakistan, Comoros, Mauritania, Bangladesh, Eritrea, Madagascar, Papua New Guinea, Lao PDR, Uzbekistan, Kenya, Yemen, Rep., Tajikistan, Nepal, Tanzania, Vietnam, and The Gambia.
- 24 lower middle income countries are in this quadrant: Indonesia, Philippines, Thailand, Algeria, Vanuatu, Syrian Arab Republic, Sri Lanka, Azerbaijan, Peru, Cape Verde, Mongolia, Samoa, China, Tonga, Ecuador, Morocco, Armenia, Tunisia, Colombia, Guatemala, Albania, Dominican Republic, Egypt, and Honduras.
- 15 upper middle income countries are also in the good governance area: Libya, Malaysia, Fiji, Mauritius, Venezuela, Romania, Russian Federation, St. Kitts and Nevis, Chile, St. Lucia, Lithuania, Latvia, St. Vincent and the Grenadines, Poland, and the Seychelles.
- And 10 high income countries box above their weight level: Brunei Darussalam, Kuwait, United Arab Emirates, Singapore, Bahrain, Estonia, Cyprus, Korea, Slovak Republic, and the Czech Republic.

A number of factors emerge as intuitive answers to questions about why different countries fit into these different 'governance quadrants'. Many of these are not about the processes of governance but rather about the governance context:

- It seems, for example, that country size might matter in influencing governance outcomes (Singapore has better survival rates at lower cost than

- Newly-rich countries also seem to do better on this indicator than their other high-income comparators, producing high survival rates at much lower costs.¹³ Do newly rich countries have a leapfrogging benefit, whereby they build capacities and relational mechanisms on the basis of the latest technology and lessons from older wealthier countries, who are locked into their more outdated systems?
- Countries with higher Gini coefficients, relative to their income league, seem to perform differently, reflecting perhaps the complexities of governing unequal countries. The USA has the highest Gini for high income countries, and a much higher cost of producing health care; countries like South Africa might argue that their inequality puts them in a higher income league than appropriate (upper-middle) which results in an unfairly harsh benchmarking.
- Higher-income countries seem to do better when there is a greater direct public sector expenditure outlay, which may speak to the complexities of governing market-driven systems. The high cost of a private sector-led US system stands in contrast to other lower cost government led systems in the OECD, for example, suggesting different costs drivers and abilities to contain cost in these systems.

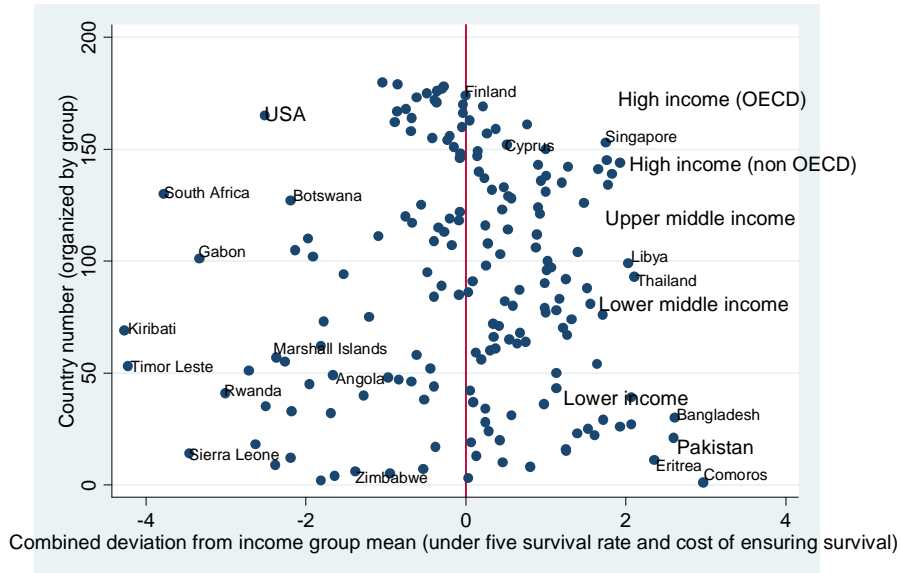
These and other second-stage observations provide important avenues for further research into why outcomes vary between countries, and will help to focus research on real governance and government impacts.

A one-dimensional measure

While we think that the two-dimensional approach to showing this indicator is appealing from a policy perspective (it shows visually where welfare is being produced and lost between the quantity and cost elements of the outcome) we also believe that a one-dimensional governance indicator might be calculated through the proposed approach. This would essentially involve combining the two elements to see how far an individual country departs from its income group on both survival rate and cost measures. The combined deviation-from-mean scores are shown in Figure 6, where the z-score for cost in each country has been subtracted from the z-score for survival rate; for the USA this results in $0.13-2.64=-2.51$. The USA fits into the area to the left of the vertical line, which reflects increasingly weaker outcomes, welfare for citizens and hence governance.

Fig.6. A single indicator of governance quality in the child health field

¹³ High income countries in the lower right good governance quadrant all seem to fall into this grouping: Bahrain, Brunei Darussalam, Cyprus, Czech Republic, Estonia, Korea, Kuwait, Singapore, Slovak Republic and the United Arab Emirates.



The vertical axis in Figure 6 is the same as that used in Figure 1, to show how this new indicator is not biased to a country's income group (as most governance indicators are). Actually, the focus on income-group controlled survival rates and costs leads one to identify three lower income countries as having the (relatively) best governance in the 181 country sample (Comoros, Pakistan and Bangladesh). The worst ten performers come from an assortment of income groups, including higher income (Equatorial Guinea and the USA), upper middle (South Africa and Gabon), lower middle (Kiribati, Timor Leste, and Djibouti) and lower income (Sierra Leone, Rwanda and Burkina Faso).

Readers might ask the obvious questions: Is governance in the child health sector really better in Pakistan and the Comoros than it is in the United States? The answer is yes, *given the different contexts of these countries*. While Pakistan and the Comoros have lower under five survival rates than the USA, these survival rates are high relative to the income group they are a part of, and the cost of generating these survival rates is relatively low, given their comparators. The USA has average survival rates, relative to its high income reference group, produced at very high costs relative to its peers. These high costs cause the United States to score substantially below the high income league averages on the combined u5mr/cost measure—as shown in Figure 6.

The United States is the only high income country to score more than two standard deviations below its peers on this indicator. It could learn from a host of other high income countries how to better govern its child health arena (especially countries like Japan and Korea, both of whom are more than one standard deviation above the peer mean). These countries appear to have better governed child health fields, where comparatively strong under-five survival rates are achieved at relatively low costs. It is not to say that the governance structures here have cultural, political or other transferability, but just that they appear good practice within the United State's income league.

CONCLUSION

We contend that this indicator is useful in helping countries benchmark themselves, identifying contextually better from worse governed countries, and guiding the latter group of countries in identifying options for reform. This, we believe, is what a good indicator should do: pointing to better and worse performers and allowing more informed investigation about why these are better and worse performers.

The usefulness of this indicator emerges primarily because the measure itself is focused on just one outcome, in one field (or sector). To return to our earlier metaphor, it reflects governance as a specific rather than a general health issue. This kind of focus is one reason why we see discrepancies between our measure and others (which a comparison of Figures 6 and 1 will show). Among these discrepancies:

- The Comoros, Bangladesh, Eritrea and Libya are all in our top ten countries but all fall below the 15th percentile for the WGI Government Effectiveness indicator.
- Only one of our top ten performers (Brunei) fits into the WGI top quartile.
- Two of our worst performers (South Africa and the USA) are in the WGI Government Effectiveness top quartile (with the USA sitting at the 91st percentile in 2007).
- Countries as varied as Botswana, Namibia, Switzerland, France and Germany also come off looking worse in our measure than in the WGI equivalent.

We hope that this kind of indicator can help counter those who critique critics of the prominent governance indicators (like WGI) by asking: “Can you measure governance better?” We think we can, and in this article we try to set out an approach to doing so, focused on the child health sector. The basic argument behind this indicator and approach is simply that governance indicators should be theoretically sound, focused on outcomes, adjusted for context, and limited to one field at a time.

Under-five survival rates are used to show what this kind of indicator could look like, but one could imagine different indicators for different fields (like education, specific industries, safety and security, etc.) (Andrews 2008). In all cases the indicator should reflect the result of delegated authority (by citizens to government) on welfare creation in the specific field. The indicator then allows second-stage discussions about why welfare creation looks like it does, how this might reflect governance, and what might be done to improve governance in the future.

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